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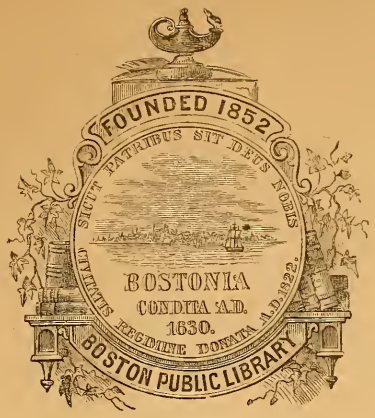

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PAMPHLETS.

(Theology.)

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PAMPHLETS.

Natural Theology.

By

Chauncey Wright.

N. A. rev.

ART. VIII. — *Religion and Chemistry: or, Proofs of God's Plan in the Atmosphere and its Elements. Ten Lectures delivered at the Brooklyn Institute, Brooklyn, N. Y., on the Graham Foundation.* By JOSIAH P. COOKE, JR., Erving Professor of Chemistry and Mineralogy in Harvard University. New York: Charles Scribner. 1864. 8vo. pp. 348.

To judge these Lectures by their value as a contribution to the literature of natural theology would be to judge them unjustly, since, as a well-devised course of popular lectures calculated to interest and instruct the general reader, they are not wanting in merit, and they evince no ordinary skill in the author as a lecturer on general science.

It is not, however, as a course of scientific lectures that this work has any claim to originality, or challenges critical notice. Its ostensible object is to present unassailable arguments for the doctrines of natural religion from the facts of chemistry alone.

Natural history and anatomy have hitherto furnished the principal grounds to the theologian for the speculation of final causes, since these sciences exhibit many instances of a complex combination of causes in the structures and habits of organic bodies, and at the same time a distinct and peculiar class of effects, namely, those which constitute the well-being and perfection of organic life; and from these causes and effects, regarded as means and ends in the order of nature, the arguments and illustrations of natural theology have been chiefly drawn. But the facts of these sciences are not merely the most useful to the theologian; they are indeed indispensable, and occupy a peculiar position in his argument, since they alone afford the class of effects on which, assumed as ends, the speculation of final causes ultimately rests.

It is only by assuming human welfare, or with this the welfare also of other sentient beings, as the end for which the universe exists, that the doctrine of final causes has hitherto found any support in natural science. The novelty, therefore, of the plan proposed in Professor Cooke's Lectures is alone sufficient to claim our attention. "At the time," says the author, "when these Lectures were written, Mr. Darwin's book

on the Origin of Species, then recently published, was exciting great attention, and was thought by many to have an injurious bearing on the argument for design. It was, therefore, made the chief aim of these Lectures to show that there is abundant evidence of design in the properties of the chemical elements alone, and hence that the great argument of natural theology rests upon a basis which no theories of organic development can shake."

On turning, however, to the arguments themselves, in which we might, from this advertisement, have justly expected an exposition of a new order of final causes, we find that, after all, the author has not departed from the beaten track of natural theology, but still bases his arguments on the assumed relation of means to ends in the adaptations of the general physical and chemical properties of matter to the conditions of organic life, though he limits his consideration of this topic to the properties of the constituents of the atmosphere in their relations to human welfare. It is not easy to see how the author could have proceeded otherwise; still, it does not appear from this that there is any evidence of design in the properties of the chemical elements alone, since it is in the relation of these to the welfare of organic beings that the evidence, such as it is, consists. With neither term of this relation can the theologian dispense, yet it is with this relation that the theories of organic development are also concerned; and we cannot understand how the great argument of natural theology is made to rest on a basis which no theories of organic development can shake, by showing, as the author very clearly does, how numerous and intimate are the dependencies of organic life on the actual and most special properties of the materials of our atmosphere. For these theories themselves attempt to account for the special adaptations of organic life to its conditions of existence, and claim to succeed even better in this department of natural history than in that which relates to the internal and more general characteristics of organization. This paralogism doubtless arose from the author's failing to distinguish with sufficient care the philosophical value of the natural evidences from their devotional uses. It is doubtless true that the properties of the chemical elements alone are sufficient to inspire a very devout mind with

a profound sense of the wisdom and power of God, even though the sciences of natural history should lose their traditional value in natural theology.

But the spontaneous, almost impulsive, transition by which the student of nature, and especially the naturalist, passes from the interests which direct his studies to a devotional frame of mind, bears little resemblance to that logical "transition of the understanding" by which natural theology would connect the interests of science with those of religion, and, by substituting an elaborate dogmatism in place of a simple faith, effect, as it were through the compulsion of reason, what is competent alone to the spontaneity of feeling.

As the author follows other modern writers in regarding natural theology as a speculative science, or as a philosophical explication of our primary and natural religious beliefs, — an attempted exposition of their logical grounds, rather than a positive proof of their validity, — he does not undertake to defend the arguments of this science as essential to natural religion; and his general treatment of its doctrines evinces a liberal spirit, and a disposition to deal fairly with the claims of scientific speculation, which cannot fail to exert a salutary influence.

What we have further to say applies, therefore, rather to natural theology as a positive science, than to our author's use of its formulas and methods in presenting the religious aspects of chemistry.

Though it is still maintained by theologians that the arguments for design are properly inductive arguments, yet the physical proofs of natural theology are not regarded by many modern writers as having any independent weight; and it is in mental and moral science that the facts are sought which will warrant the induction of design from the general phenomena of nature. It is hardly considered logical, even by the theological writers of our day, to conclude, with Paley, "that the works of nature proceed from intelligence and design; because, in the properties of relation to a purpose, subserviency to a use, they resemble what intelligence and design are constantly producing, and what nothing [which we know] except intelligence and design ever produce at all." For it is denied by the phys-

ical philosopher that causes and effects in natural phenomena can be interpreted into the terms of natural theology by any key which science itself affords. By what criterion, he would ask, can we distinguish among the numberless effects, that are also causes, and among the causes that may, for aught we can know, be also effects, — how can we distinguish which are the means and which are the ends ? What effects are we warranted by observation in calling final, or final causes, or the ends for which the others exist ? The belief on other grounds that there *are* final causes, that the universe exists for some purpose, is one thing ; but the belief that science discloses, or even that science can disclose, what this purpose is, is quite a different thing. The designation of those effects as final in nature which contribute to human desires or human welfare, or even to the welfare of all sentient beings, cannot be legitimately made for the purposes of this argument, since human and other sentient beings are not the agents by which these supposed ends are attained ; neither can the causes which bring these effects to pass be regarded as servants obedient to the commands of the agents to whom these effects are desirable. The analogy of natural production to human contrivance fails them at the very outset; and the interpretation of natural causes and effects as means and ends, virtually assumes the conclusion of the argument, and is not founded on any natural evidence. These considerations are overlooked by most writers on this subject, who, in addition to a legitimate faith in final causes, assume the dogma that these causes are manifest or discoverable. They begin with the definition, sometimes called an argument, " that a combination of means conspiring to a particular end implies intelligence," and they then assume that the causes which science discovers are means, or exist for the sake of the effects which science accounts for ; and from the relation of means to ends, thus assumed, they infer intelligence.

The definition we have quoted contains, however, more than is really implied in this argument, since the relation of means to ends in itself, and without further qualification, implies intelligence, while a combination of means conspiring to a particular end implies a high degree of intelligence; and it is with this, the degree of intelligence manifested in the phenom-

ena of nature, that scientific discourses on the natural evidences are really dealing, though sometimes unconsciously. These discourses really aim, not so much to prove the existence of design in the universe, as to show the wisdom of certain designs which are assumed to be manifest. But for this purpose it is requisite to translate the facts of science, and those combinations of causes which are discovered to be the conditions of particular effects, into the terms of the argument, and to show that these combinations are means, or exist for the sake of the particular effects, for which, as ends, the universe itself must be shown to exist, — a task for which science is obviously incompetent.

Waiving these fundamental objections to the argument for design, which, let us repeat, are not objections to the spiritual doctrine of final causes, or to the belief that final causes exist, we will turn to the objections which modern writers of natural theology themselves allow.

It is essential to the validity of Paley's argument, that "design," or the determination of effects by the intelligence of an agent, be shown to be not merely the only known cause of such effects, but also to be a real cause, or an independent determination by an efficient agent. If intelligence itself be a product, if the human powers of contrivance are themselves effects, it follows that designed effects should be ascribed, not to intelligence, but to the causes of intelligence; and the same objection will hold against the theologian's use of the word "design," which he urges against the physicist's use of the word "law." "It is a perversion of language," says Paley, "to assign any law as the efficient operative cause of anything. A law presupposes an agent, for it only is the mode according to which the agent proceeds; it implies a power, for it is the order according to which this power acts. Without this agent, without this power, which are both distinct from itself, the 'law' does nothing, is nothing." By substituting the word "design" for the word "law" in this quotation, we have the materialist's objection to the theologian's perversion of language. This objection was entirely overlooked by Paley, who seems to have thought it sufficient for the purposes of his argument to consider only the phenomena of the visible material

universe. But later writers have seen the necessity of basing the argument for design on the psychological doctrine that intelligence is a free, undetermined power, and that design is the free, undetermined act of this power. Without this assumption, which indeed Paley himself virtually makes, it would be as unphilosophical to refer the course of nature to the determination of intelligence, as it is to refer it to the determination of the abstraction which the materialist prefers, or to the "agency of law."

"That intelligence stands first in the absolute order of existence, — in other words, that final preceded efficient causes, — and that the universe is governed by moral laws," are the two propositions, the proof of which, says Sir William Hamilton, is the proof of a God; and this proof "establishes its foundation exclusively on the phenomena of mind." Without this psychological proof, the order of adaptation cannot be logically referred to the order of design; and the resemblance of human contrivances to the adaptations of nature can only warrant the conclusion that both proceed from similar conditions, and by a power of whose efficiency human intelligence and physical laws are alike manifestations, but whose nature neither human intelligence comprehends nor physical laws can disclose.

Even such a result, which is all that the unaided physical sciences can compass, is not altogether barren of religious interest, though it is made so by the materialist's attempt to define the nature of power by assigning to physical forces an absolute efficiency. The spiritualist, on the other hand, if we allow his psychological proof that intelligence stands first in the absolute order of existence, and is a free, undetermined power, is logically competent to interpret the order of nature as a designed order. Yet to him physical proofs of design have little or no value, and can only serve as obscure and enigmatical illustrations of what is far more clearly apparent in the study of mind. And though logically competent to interpret the order of design, if his spiritual doctrine be true, yet the difficulties which we first mentioned, and waived for the nonce, are difficulties as insuperable to the psychologist as to the physicist. He gains no criterion from his studies by which to distinguish, in the order of natural phenomena, which are

the means and which are the ends, or where the relation of means to ends is to be found, among the infinite successions of effects which are also causes, and of causes which may, for aught he can know, be also effects. His faith in final causes is not a guide by which he can determine what the final causes are by which he believes the order of nature to be determined.

These theoretical objections to a philosophy, which assigns physical reasons for a faith in final causes, are by no means the most important objections. The practical influences and effects of such philosophizing are, we believe, more obnoxious to the true interests of religion than its methods are to the true principles of philosophy, and fully justify an examination of its arguments. For bad arguments may go for nothing, while good ones necessitate their conclusions; and we think it fortunate for the purity of religious truth that theologians have succeeded no better in this direction.

Not only do the peculiar doctrines of natural theology add nothing to the grounds of a faith in final causes; they, in effect, narrow this faith to ideas which scarcely rise in dignity above the rank of superstitions. If to believe that God is what we can think him to be is blasphemy, what shall we call the attempt to discover his intentions and to interpret his plans in nature? If science were able to discover a much closer analogy than it does between the adaptations of nature and the designs of human contrivance, would it be any less derogatory to the dignity of the Divine nature to attempt by such analogies to fathom his designs and plans, or to suppose that what appears as a designed order is really any clew to the purposes of the Almighty? And when, even transcending this degree of presumption, theology would fix a limit to the researches and hypotheses of science, on the ground that they tend to subvert religious doctrines, or the assumed results of a religious philosophy, we are warranted — nay, constrained, from practical considerations — to question the grounds of its pretensions, to allow it no longer to shield its falseness and weakness behind the dignity and worth of the interests to which it is falsely dedicated. It is from the illegitimate pretensions of natural theology that the figment of a conflict between science and religion has arisen; and the efforts of religious thinkers to coun-

teract the supposed atheistical tendencies of science, and to give a religious interpretation to its facts, have only served to deepen the false impression that such a conflict actually exists, so that revolutions in scientific theories have been made to appear in the character of refutations of religious doctrines.

That there is a fundamental distinction between the natures of scientific and religious ideas ought never to be doubted ; but that contradiction can arise, except between religious and superstitious ideas, ought not for a moment to be admitted. Progress in science is really a progress in religious truth, not because any new reasons are discovered for the doctrines of religion, but because advancement in knowledge frees us from the errors both of ignorance and of superstition, exposing the mistakes of a false religious philosophy, as well as those of a false science. If the teachings of natural theology are liable to be refuted or corrected by progress in knowledge, it is legitimate to suppose, not that science is irreligious, but that these teachings are superstitious; and whatever evils result from the discoveries of science are attributable to the rashness of the theologian, and not to the supposed irreligious tendencies of science. When a proof of special design is invalidated by the discovery that a particular effect in the operations of nature, which previously appeared to result from a special constitution and adjustment of certain forces, is really a consequent of the general properties of matter, — when, for example, the laws of planetary motion were shown to result from the law of universal gravitation, and the mathematical plan of the solar system was seen to be a consequent of a single universal principle, — the harm, if there be any, results from the theologian's mistakes, and not from the corrections of science. He should refrain from attributing any special plan or purpose to the creation, if he would find in science a constant support to religious truth. But this abstinence does not involve a withdrawal of the mind from the proper religious interests of natural science, nor weaken a legitimate faith in final causes. Even the Newtonian mechanism of the heavens, simple, primordial, and necessary as it seems, still discloses to the devout mind evidence of a wisdom unfathomable, and of a design which transcends interpretation ; and when, in the more complicated order

of organic life, surprising and beautiful adaptations inspire in the naturalist the conviction that purpose and intelligence are manifested in them,—that they spring from a nature akin to the devising power of his own mind, — there is nothing in science or philosophy which can legitimately rebuke his enthusiasm, — nothing, unless it be the dogmatism which would presumptuously interpret as science what is only manifest to faith, or would require of faith that it shall justify itself by proofs.

The progress of science has indeed been a progress in religious truth, but in spite of false theology, and in a way which narrow theologians have constantly opposed. It has defined with greater and greater distinctness the boundary between what can be discovered and what cannot. It has purified religious truth by turning back the moral consciousness to discover clearly in itself what it had obscurely divined from its own interpretations of nature. It has impressed on the mind of the cautious inquirer the futility, as well as the irreverence, of attempting a philosophy which can at best be but a finer sort of superstition, a real limitation to our conceptions of final causes, while apparently an extension of them.

But instead of learning these lessons from the experience of repeated failures, theologians have constantly opposed new hypotheses in science, until proof has compelled a tardy assent, and even then they have retreated to other portions of science, as if these were the only refuge of a persecuted faith.

Humility and cautiousness, and that suspension of judgment in matters about which we really know so little, which a recent theological writer has recommended, in view of the pending controversy on the origin of organic species and adaptations, are virtues, which, had they been generally cultivated by theologians, would have rendered this controversy harmless at least, if not unnecessary.

ART. IX. — 1. *The Herald and Genealogist.* Edited by JOHN GOUGH NICHOLS, F. S. A. Vol. I. London: John Bowyer Nichols and Sons. 1863. pp. 594.

2. *The New England Historical and Genealogical Register and Antiquarian Journal.* Vol. XVIII. Part 3. (July, 1864.) *Report of the Standing Committee on Heraldry.*

3. *A Manual of Heraldry, Historical and Popular, with Seven Hundred Illustrations.* By CHARLES BOUTELL, M. A. 1863.

WIT has often been levelled against the pursuits of genealogists and family historians, and has often found a fair mark in them for its shafts. He must be of poor blood himself who is proud to trace his descent through a long line of inconspicuous or worthless nobodies, or who brushes the dust off his grandfathers' tombs in a spirit of vain and trivial curiosity, instead of the simple reverence of filial piety. Besides, as the worthy and valorous knight, Don Quixote de la Mancha, says, "the brave man carves out his fortune, and every man is the son of his own works." But, on the other hand, an honorable man himself may well take pleasure in a line of honorable ancestors, and the most consistent democrat among us will find nothing inharmonious with his principles in tracing his origin to those who were good men and brave in their day. At any rate, it seems to be almost an instinct in civilized man to seek to know who were his ancestors; and in our country, above all, we gratify our longing for a past and for a history, by following up our family names till we have found their original home in the Old World.

Nowhere of late years has the science of genealogy been more zealously pursued than in New England. To one familiar with the subject, the claim of the Virginia and South Carolina "chivalry," that they represented the gentlemen of England, while the Yankees were no better than base-born churls, was as amusing as it was false. But the repeated assertion of the claim has led to some special investigations in a limited field, of which we propose to present some of the results to our readers. Heraldry may be used as an assistance in genealogical and historical studies; and we propose to in-

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